What is claimed is:

1. A coaxial adapter comprising:

a ground sleeve having a first ground sleeve end adapted to contact a ground lead of a coaxial cable and a second ground sleeve end adapted to contact a ground probe of a test probe, the ground sleeve being characterized by a first outer radius at said first ground sleeve end and a second outer radius at said second ground sleeve end; and

a signal pin positioned inside of and spaced apart from the ground sleeve, the signal pin having a first signal pin end adapted to contact a signal lead of a coaxial cable and a second signal pin end adapted to contact a signal probe of a test probe, the signal pin being characterized by a first inner radius at said first signal pin end and a second inner radius at said second signal pin end;

wherein the first outer radius is different than the second outer radius, the first inner radius is different than the second inner radius, and a ratio of the first inner radius to the first outer radius is the same as the ratio of the second inner radius to the second outer radius.

2. The coaxial adapter of claim 1 wherein the signal pin is externally tapered and the ground sleeve is internally tapered to maintain said ratio constant from the first signal pin end to the second signal pin end.

3. The coaxial adapter of claim 2 wherein the ground sleeve is made of copper.

4. The coaxial adapter of claim 2 wherein the first ground sleeve end is externally threaded.

5. The coaxial adapter of claim 4 wherein the second ground sleeve end is externally unthreaded.

6. A testing system comprising:

a network analyzer having a radio frequency out port and a radio frequency in port;

a first coaxial cable having a first end connected to the radio frequency out port and a second end;

a radio frequency test probe having a first end electrically coupled to the second end of the first coaxial cable and a second end;

an adapter having a first end in contact with the second end of the radio frequency test probe and a second end; and

a second coaxial cable having a first end connected to the second end of the adapter and a second end in communication with the radio frequency out port;

wherein the first coaxial cable, the radio frequency test probe, the adapter, and the second coaxial cable all have the same impedance.

7. The testing system of claim 6 wherein the adapter comprises:

a ground sleeve having a first ground sleeve end adapted to contact a ground lead of a coaxial cable and a second ground sleeve end adapted to contact a ground probe of the test probe; and

a signal pin positioned inside of and spaced apart from the ground sleeve, the signal pin having a first signal pin end adapted to contact a signal lead of a coaxial cable and a second signal pin end adapted to contact a signal probe of the test probe.

8. The testing system of claim 7 wherein:

the ground sleeve is characterized by a first outer radius at said first ground sleeve end and a second outer radius at said second ground sleeve end;

the first outer radius is different than the second outer radius;

the signal pin is characterized by a first inner radius at said first signal pin end and a second inner radius at said second signal pin end;

the first inner radius is different than the second inner radius; and

a ratio of the first inner radius to the first outer radius is the same as the ratio of the second inner radius to the second outer radius.

9. The testing system of claim 8 wherein the signal pin and the ground sleeve are both tapered to maintain said ratio constant throughout the adapter.

10. The testing system of claim 9 wherein the signal probe is characterized by a signal probe radius equal to the second inner radius of the signal pin and the ground probe is characterized by a ground probe radius equal to the second outer radius of the ground sleeve.

11. The testing system of Claim 7 further comprising an adapter fixturing plate, the adapter being secured to the adapter fixturing plate and the adapter fixturing plate have registration surfaces to position the adapter with respect to the radio frequency probe.

12. A method comprising:

connecting in series at least a first coaxial cable, an adapter, and a second coaxial cable, all having the same impedance, to form a calibration configuration;

sending a first radio frequency signal through the calibration configuration;

measuring a first loss in the first radio frequency signal after the first radio frequency signal is sent through the calibration configuration;

placing a radio frequency test probe in a test fixture;

connecting in series at least the first coaxial cable, the radio frequency test probe in the test fixture, the adapter, and the second coaxial cable to form a test configuration in which the adapter contacts the radio frequency test probe;

sending a second radio frequency signal through the test configuration;

measuring a second loss in the second radio frequency signal after the second radio frequency signal is sent through the test configuration; and

subtracting the first loss from the second loss to derive a fixture loss.

13. The method of claim 12 further comprising;

contacting a device under test with the radio frequency test probe in the test fixture.

14. The method of claim 13 wherein the calibration configuration includes no wireless component, the test configuration includes no wireless component, and the device under test is a wireless component.

15. The method of claim 12 wherein the adapter comprises:

a ground sleeve having a first ground sleeve end adapted to contact a ground lead of a coaxial cable and a second ground sleeve end adapted to contact a ground probe of the test probe; and

a signal pin positioned inside of and spaced apart from the ground sleeve, the signal pin having a first signal pin end adapted to contact a signal lead of a coaxial cable and a second signal pin end adapted to contact a signal probe of the test probe.

16. The method of claim 15 wherein:

the ground sleeve is characterized by a first outer radius at said first ground sleeve end and a second outer radius at said second ground sleeve end;

the first outer radius is different than the second outer radius;

the signal pin is characterized by a first inner radius at said first signal pin end and a second inner radius at said second signal pin end;

the first inner radius is different than the second inner radius; and

a ratio of the first inner radius to the first outer radius is the same as the ratio of the second inner radius to the second outer radius.

17. The method of claim 16 wherein the signal pin and the ground sleeve are both tapered to maintain said ratio constant throughout the adapter.

18. A coaxial adapter comprising:

a ground sleeve having a first ground sleeve end adapted to contact a ground lead of a coaxial cable and a second ground sleeve end adapted to contact a ground probe of a test probe, the ground sleeve being characterized by a radius r_o measured from the center of the ground sleeve to the inner surface of the ground sleeve;

a signal pin positioned inside of and spaced apart from the ground sleeve, the signal pin having a first signal pin end adapted to contact a signal lead of a coaxial

cable and a second signal pin end adapted to contact a signal probe of a test probe, the signal pin being characterized by a radius r_i measured from the center of the test probe to an outer surface of the test probe, and the signal pin and ground sleeve having a relative magnetic permeability μ; and

a dielectric material interposed between at least part of the signal pin and at least part of the ground sleeve, the dielectric material having a relative permittivity ε;

wherein r_o, μ, r_i, and ε are selected such that an impedance Z_o of the adapter matches an impedance of the test probe according to the following formula:

$$Z_o = \frac{\ln(r_o/r_i)\sqrt{\mu/\varepsilon}}{2\pi}$$

19. The coaxial adapter of claim 18 wherein the dielectric material is air.

20. The coaxial adapter of claim 18 wherein the signal pin is tapered from the first signal pin end to the second signal pin end.

21. The coaxial adapter of claim 19 wherein the ground sleeve is tapered from the first ground sleeve end to the second ground sleeve end.

22. The coaxial adapter of claim 21 wherein a ratio r_o/r_i is maintained constant over a length of said coaxial adapter.